



## SEQUENCE LISTING

&lt;110&gt; Orban, Tihamer

&lt;120&gt; AUTOANTIGEN VACCINE

&lt;130&gt; 10276-067001

&lt;140&gt; 10/038,686

&lt;141&gt; 2002-01-04

&lt;150&gt; 60/260,068

&lt;151&gt; 2001-01-05

&lt;160&gt; 6

&lt;170&gt; FastSEQ for Windows Version 4.0

&lt;210&gt; 1

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu  
1 5 10 15  
Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly  
20 25 30  
Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe  
35 40 45  
Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly  
50 55 60  
Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu  
65 70 75 80  
Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys  
85 90 95  
Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn  
100 105 110

&lt;210&gt; 2

&lt;211&gt; 585

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

Met Ala Ser Pro Gly Ser Gly Phe Trp Ser Phe Gly Ser Glu Asp Gly  
1 5 10 15  
Ser Gly Asp Ser Glu Asn Pro Gly Thr Ala Arg Ala Trp Cys Gln Val  
20 25 30  
Ala Gln Lys Phe Thr Gly Gly Ile Gly Asn Lys Leu Cys Ala Leu Leu  
35 40 45  
Tyr Gly Asp Ala Glu Lys Pro Ala Glu Ser Gly Gly Ser Gln Pro Pro  
50 55 60  
Arg Ala Ala Ala Arg Lys Ala Ala Cys Ala Cys Asp Gln Lys Pro Cys

65                      70                      75                      80  
 Ser Cys Ser Lys Val Asp Val Asn Tyr Ala Phe Leu His Ala Thr Asp  
                                  85                      90                      95  
 Leu Leu Pro Ala Cys Asp Gly Glu Arg Pro Thr Leu Ala Phe Leu Gln  
                                  100                      105                      110  
 Asp Val Met Asn Ile Leu Leu Gln Tyr Val Val Lys Ser Phe Asp Arg  
                                  115                      120                      125  
 Ser Thr Lys Val Ile Asp Phe His Tyr Pro Asn Glu Leu Leu Gln Glu  
                                  130                      135                      140  
 Tyr Asn Trp Glu Leu Ala Asp Gln Pro Gln Asn Leu Glu Glu Ile Leu  
 145                      150                      155                      160  
 Met His Cys Gln Thr Thr Leu Lys Tyr Ala Ile Lys Thr Gly His Pro  
                                  165                      170                      175  
 Arg Tyr Phe Asn Gln Leu Ser Thr Gly Leu Asp Met Val Gly Leu Ala  
                                  180                      185                      190  
 Ala Asp Trp Leu Thr Ser Thr Ala Asn Thr Asn Met Phe Thr Tyr Glu  
                                  195                      200                      205  
 Ile Ala Pro Val Phe Val Leu Leu Glu Tyr Val Thr Leu Lys Lys Met  
                                  210                      215                      220  
 Arg Glu Ile Ile Gly Trp Pro Gly Gly Ser Gly Asp Gly Ile Phe Ser  
 225                      230                      235                      240  
 Pro Gly Gly Ala Ile Ser Asn Met Tyr Ala Met Met Ile Ala Arg Phe  
                                  245                      250                      255  
 Lys Met Phe Pro Glu Val Lys Glu Lys Gly Met Ala Ala Leu Pro Arg  
                                  260                      265                      270  
 Leu Ile Ala Phe Thr Ser Glu His Ser His Phe Ser Leu Lys Lys Gly  
                                  275                      280                      285  
 Ala Ala Ala Leu Gly Ile Gly Thr Asp Ser Val Ile Leu Ile Lys Cys  
                                  290                      295                      300  
 Asp Glu Arg Gly Lys Met Ile Pro Ser Asp Leu Glu Arg Arg Ile Leu  
 305                      310                      315                      320  
 Glu Ala Lys Gln Lys Gly Phe Val Pro Phe Leu Val Ser Ala Thr Ala  
                                  325                      330                      335  
 Gly Thr Thr Val Tyr Gly Ala Phe Asp Pro Leu Leu Ala Val Ala Asp  
                                  340                      345                      350  
 Ile Cys Lys Lys Tyr Lys Ile Trp Met His Val Asp Ala Ala Trp Gly  
                                  355                      360                      365  
 Gly Gly Leu Leu Met Ser Arg Lys His Lys Trp Lys Leu Ser Gly Val  
                                  370                      375                      380  
 Glu Arg Ala Asn Ser Val Thr Trp Asn Pro His Lys Met Met Gly Val  
 385                      390                      395                      400  
 Pro Leu Gln Cys Ser Ala Leu Leu Val Arg Glu Glu Gly Leu Met Gln  
                                  405                      410                      415  
 Asn Cys Asn Gln Met His Ala Ser Tyr Leu Phe Gln Gln Asp Lys His  
                                  420                      425                      430  
 Tyr Asp Leu Ser Tyr Asp Thr Gly Asp Lys Ala Leu Gln Cys Gly Arg  
                                  435                      440                      445  
 His Val Asp Val Phe Lys Leu Trp Leu Met Trp Arg Ala Lys Gly Thr  
                                  450                      455                      460  
 Thr Gly Phe Glu Ala His Val Asp Lys Cys Leu Glu Leu Ala Glu Tyr  
 465                      470                      475                      480  
 Leu Tyr Asn Ile Ile Lys Asn Arg Glu Gly Tyr Glu Met Val Phe Asp  
                                  485                      490                      495  
 Gly Lys Pro Gln His Thr Asn Val Cys Phe Trp Tyr Ile Pro Pro Ser  
                                  500                      505                      510  
 Leu Arg Thr Leu Glu Asp Asn Glu Glu Arg Met Ser Arg Leu Ser Lys  
                                  515                      520                      525

A2

Val	Ala	Pro	Val	Ile	Lys	Ala	Arg	Met	Met	Glu	Tyr	Gly	Thr	Thr	Met
530						535						540			
Val	Ser	Tyr	Gln	Pro	Leu	Gly	Asp	Lys	Val	Asn	Phe	Phe	Arg	Met	Val
545					550					555					560
Ile	Ser	Asn	Pro	Ala	Ala	Thr	His	Gln	Asp	Ile	Asp	Phe	Leu	Ile	Glu
				565					570					575	
Glu	Ile	Glu	Arg	Leu	Gly	Gln	Asp	Leu							
			580					585							

<210> 3  
 <211> 979  
 <212> PRT  
 <213> Homo sapiens

<400> 3

Met	Arg	Arg	Pro	Arg	Arg	Pro	Gly	Gly	Leu	Gly	Gly	Ser	Gly	Gly	Leu
1				5					10					15	
Arg	Leu	Leu	Leu	Cys	Leu	Leu	Leu	Leu	Ser	Ser	Arg	Pro	Gly	Gly	Cys
			20					25					30		
Ser	Ala	Val	Ser	Ala	His	Gly	Cys	Leu	Phe	Asp	Arg	Arg	Leu	Cys	Ser
		35					40					45			
His	Leu	Glu	Val	Cys	Ile	Gln	Asp	Gly	Leu	Phe	Gly	Gln	Cys	Gln	Val
	50					55					60				
Gly	Val	Gly	Gln	Ala	Arg	Pro	Leu	Leu	Gln	Val	Thr	Ser	Pro	Val	Leu
65					70					75					80
Gln	Arg	Leu	Gln	Gly	Val	Leu	Arg	Gln	Leu	Met	Ser	Gln	Gly	Leu	Ser
				85					90					95	
Trp	His	Asp	Asp	Leu	Thr	Gln	Tyr	Val	Ile	Ser	Gln	Glu	Met	Glu	Arg
			100					105					110		
Ile	Pro	Arg	Leu	Arg	Pro	Pro	Glu	Pro	Arg	Pro	Arg	Asp	Arg	Ser	Gly
		115					120					125			
Leu	Ala	Pro	Lys	Arg	Pro	Gly	Pro	Ala	Gly	Glu	Leu	Leu	Leu	Gln	Asp
	130					135					140				
Ile	Pro	Thr	Gly	Ser	Ala	Pro	Ala	Ala	Gln	His	Arg	Leu	Pro	Gln	Pro
145					150					155					160
Pro	Val	Gly	Lys	Gly	Gly	Ala	Gly	Ala	Ser	Ser	Ser	Leu	Ser	Pro	Leu
				165					170					175	
Gln	Ala	Glu	Leu	Leu	Pro	Pro	Leu	Leu	Glu	His	Leu	Leu	Leu	Pro	Pro
			180					185					190		
Gln	Pro	Pro	His	Pro	Ser	Leu	Ser	Tyr	Glu	Pro	Ala	Leu	Leu	Gln	Pro
		195					200					205			
Tyr	Leu	Phe	His	Gln	Phe	Gly	Ser	Arg	Asp	Gly	Ser	Arg	Val	Ser	Glu
	210					215					220				
Gly	Ser	Pro	Gly	Met	Val	Ser	Val	Gly	Pro	Leu	Pro	Lys	Ala	Glu	Ala
225					230					235					240
Pro	Ala	Leu	Phe	Ser	Arg	Thr	Ala	Ser	Lys	Gly	Ile	Phe	Gly	Asp	His
				245					250					255	
Pro	Gly	His	Ser	Tyr	Gly	Asp	Leu	Pro	Gly	Pro	Ser	Pro	Ala	Gln	Leu
			260					265					270		
Phe	Gln	Asp	Ser	Gly	Leu	Leu	Tyr	Leu	Ala	Gln	Glu	Leu	Pro	Ala	Pro
		275					280					285			
Ser	Arg	Ala	Arg	Val	Pro	Arg	Leu	Pro	Glu	Gln	Gly	Ser	Ser	Ser	Arg
	290					295					300				
Ala	Glu	Asp	Ser	Pro	Glu	Gly	Tyr	Glu	Lys	Glu	Gly	Leu	Gly	Asp	Arg
305					310					315					320
Gly	Glu	Lys	Pro	Ala	Ser	Pro	Ala	Val	Gln	Pro	Asp	Ala	Ala	Leu	Gln
				325					330					335	

A2

Arg Leu Ala Ala Val Leu Ala Gly Tyr Gly Val Glu Leu Arg Gln Leu  
 340 345 350  
 Thr Pro Glu Gln Leu Ser Thr Leu Leu Thr Leu Leu Gln Leu Leu Pro  
 355 360 365  
 Lys Gly Ala Gly Arg Asn Pro Gly Gly Val Val Asn Val Gly Ala Asp  
 370 375 380  
 Ile Lys Lys Thr Met Glu Gly Pro Val Glu Gly Arg Asp Thr Ala Glu  
 385 390 395 400  
 Leu Pro Ala Arg Thr Ser Pro Met Pro Gly His Pro Thr Ala Ser Pro  
 405 410 415  
 Thr Ser Ser Glu Val Gln Gln Val Pro Ser Pro Val Ser Ser Glu Pro  
 420 425 430  
 Pro Lys Ala Ala Arg Pro Pro Val Thr Pro Val Leu Leu Glu Lys Lys  
 435 440 445  
 Ser Pro Leu Gly Gln Ser Gln Pro Thr Val Ala Gly Gln Pro Ser Ala  
 450 455 460  
 Arg Pro Ala Ala Glu Glu Tyr Gly Tyr Ile Val Thr Asp Gln Lys Pro  
 465 470 475 480  
 Leu Ser Leu Ala Ala Gly Val Lys Leu Leu Glu Ile Leu Ala Glu His  
 485 490 495  
 Val His Met Ser Ser Gly Ser Phe Ile Asn Ile Ser Val Val Gly Pro  
 500 505 510  
 Ala Leu Thr Phe Arg Ile Arg His Asn Glu Gln Asn Leu Ser Leu Ala  
 515 520 525  
 Asp Val Thr Gln Gln Ala Gly Leu Val Lys Ser Glu Leu Glu Ala Gln  
 530 535 540  
 Thr Gly Leu Gln Ile Leu Gln Thr Gly Val Gly Gln Arg Glu Glu Ala  
 545 550 555 560  
 Ala Ala Val Leu Pro Gln Thr Ala His Ser Thr Ser Pro Met Arg Ser  
 565 570 575  
 Val Leu Leu Thr Leu Val Ala Leu Ala Gly Val Ala Gly Leu Leu Val  
 580 585 590  
 Ala Leu Ala Val Ala Leu Cys Val Arg Gln His Ala Arg Gln Gln Asp  
 595 600 605  
 Lys Glu Arg Leu Ala Ala Leu Gly Pro Glu Gly Ala His Gly Asp Thr  
 610 615 620  
 Thr Phe Glu Tyr Gln Asp Leu Cys Arg Gln His Met Ala Thr Lys Ser  
 625 630 635 640  
 Leu Phe Asn Arg Ala Glu Gly Pro Pro Glu Pro Ser Arg Val Ser Ser  
 645 650 655  
 Val Ser Ser Gln Phe Ser Asp Ala Ala Gln Ala Ser Pro Ser Ser His  
 660 665 670  
 Ser Ser Thr Pro Ser Trp Cys Glu Glu Pro Ala Gln Ala Asn Met Asp  
 675 680 685  
 Ile Ser Thr Gly His Met Ile Leu Ala Tyr Met Glu Asp His Leu Arg  
 690 695 700  
 Asn Arg Asp Arg Leu Ala Lys Glu Trp Gln Ala Leu Cys Ala Tyr Gln  
 705 710 715 720  
 Ala Glu Pro Asn Thr Cys Ala Thr Ala Gln Gly Glu Gly Asn Ile Lys  
 725 730 735  
 Lys Asn Arg His Pro Asp Phe Leu Pro Tyr Asp His Ala Arg Ile Lys  
 740 745 750  
 Leu Lys Val Glu Ser Ser Pro Ser Arg Ser Asp Tyr Ile Asn Ala Ser  
 755 760 765  
 Pro Ile Ile Glu His Asp Pro Arg Met Pro Ala Tyr Ile Ala Thr Gln  
 770 775 780  
 Gly Pro Leu Ser His Thr Ile Ala Asp Phe Trp Gln Met Val Trp Glu

A2

785                      790                      795                      800  
 Ser Gly Cys Thr Val Ile Val Met Leu Thr Pro Leu Val Glu Asp Gly  
                                  805                      810                      815  
 Val Lys Gln Cys Asp Arg Tyr Trp Pro Asp Glu Gly Ala Ser Leu Tyr  
                                  820                      825                      830  
 His Val Tyr Glu Val Asn Leu Val Ser Glu His Ile Trp Cys Glu Asp  
                                  835                      840                      845  
 Phe Leu Val Arg Ser Phe Tyr Leu Lys Asn Val Gln Thr Gln Glu Thr  
                                  850                      855                      860  
 Arg Thr Leu Thr Gln Phe His Phe Leu Ser Trp Pro Ala Glu Gly Thr  
 865                      870                      875                      880  
 Pro Ala Ser Thr Arg Pro Leu Leu Asp Phe Arg Arg Lys Val Asn Lys  
                                  885                      890                      895  
 Cys Tyr Arg Gly Arg Ser Cys Pro Ile Ile Val His Cys Ser Asp Gly  
                                  900                      905                      910  
 Ala Gly Arg Thr Gly Thr Tyr Ile Leu Ile Asp Met Val Leu Asn Arg  
                                  915                      920                      925  
 Met Ala Lys Gly Val Lys Glu Ile Asp Ile Ala Ala Thr Leu Glu His  
                                  930                      935                      940  
 Val Arg Asp Gln Arg Pro Gly Leu Val Arg Ser Lys Asp Gln Phe Glu  
 945                      950                      955                      960  
 Phe Ala Leu Thr Ala Val Ala Glu Glu Val Asn Ala Ile Leu Lys Ala  
                                  965                      970                      975  
 Leu Pro Gln

<210> 4  
 <211> 622  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
 Met Ser Met Arg Ser Pro Ile Ser Ala Gln Leu Ala Leu Asp Gly Val  
 1                      5                      10                      15  
 Gly Thr Met Val Asn Cys Thr Ile Lys Ser Glu Glu Lys Lys Glu Pro  
                                  20                      25                      30  
 Cys His Glu Ala Pro Gln Gly Ser Ala Thr Ala Ala Glu Pro Gln Pro  
                                  35                      40                      45  
 Gly Asp Pro Ala Arg Ala Ser Gln Asp Ser Ala Asp Pro Gln Ala Pro  
                                  50                      55                      60  
 Ala Gln Gly Asn Phe Arg Gly Ser Trp Asp Cys Ser Ser Pro Glu Gly  
 65                      70                      75                      80  
 Asn Gly Ser Pro Glu Pro Lys Arg Pro Gly Ala Ser Glu Ala Ala Ser  
                                  85                      90                      95  
 Gly Ser Gln Glu Lys Leu Asp Phe Asn Arg Asn Leu Lys Glu Val Val  
                                  100                      105                      110  
 Pro Ala Ile Glu Lys Leu Leu Ser Ser Asp Trp Lys Glu Arg Phe Leu  
                                  115                      120                      125  
 Gly Arg Asn Ser Met Glu Ala Lys Asp Val Lys Gly Thr Gln Glu Ser  
                                  130                      135                      140  
 Leu Ala Glu Lys Glu Leu Gln Leu Leu Val Met Ile His Gln Leu Ser  
 145                      150                      155                      160  
 Thr Leu Arg Asp Gln Leu Leu Thr Ala His Ser Glu Gln Lys Asn Met  
                                  165                      170                      175  
 Ala Ala Met Leu Phe Glu Lys Gln Gln Gln Gln Met Glu Leu Ala Arg  
                                  180                      185                      190  
 Gln Gln Gln Glu Gln Ile Ala Lys Gln Gln Gln Gln Leu Ile Gln Gln

A2

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<210> 5
<211> 483
<212> PRT
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<212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5

Met Ser Gly His Lys Cys Ser Tyr Pro Trp Asp Leu Gln Asp Arg Tyr  
 1 5 10 15  
 Ala Gln Asp Lys Ser Val Val Asn Lys Met Gln Gln Arg Tyr Trp Glu  
 20 25 30  
 Thr Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His  
 35 40 45  
 Val Val Ala Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His  
 50 55 60  
 Ser Ile Gln Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr  
 65 70 75 80  
 Gln Lys Arg Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys  
 85 90 95  
 Phe Leu Arg Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met  
 100 105 110  
 Met Gln Ala Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu  
 115 120 125  
 Ala Leu Arg Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu Thr Phe  
 130 135 140  
 Arg His Arg Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg Met Glu  
 145 150 155 160  
 Gln Cys Arg Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys Asp Val  
 165 170 175  
 Ser Gln Glu Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys Phe Arg  
 180 185 190  
 Lys Val Gln Thr Gln Val Arg Leu Ala Lys Lys Asn Phe Asp Lys Leu  
 195 200 205  
 Lys Met Asp Val Cys Gln Lys Val Asp Leu Leu Gly Ala Ser Arg Cys  
 210 215 220  
 Asn Leu Leu Ser His Met Leu Ala Thr Tyr Gln Thr Thr Leu Leu His  
 225 230 235 240  
 Phe Trp Glu Lys Thr Ser His Thr Met Ala Ala Ile His Glu Ser Phe  
 245 250 255  
 Lys Gly Tyr Gln Pro Tyr Glu Phe Thr Thr Leu Lys Ser Leu Gln Asp  
 260 265 270  
 Pro Met Lys Lys Leu Val Glu Lys Glu Lys Lys Lys Ile Asn Gln  
 275 280 285  
 Gln Glu Ser Thr Asp Ala Ala Val Gln Glu Pro Ser Gln Leu Ile Ser  
 290 295 300  
 Leu Glu Glu Glu Asn Gln Arg Lys Glu Ser Ser Ser Phe Lys Thr Glu  
 305 310 315 320  
 Asp Gly Lys Ser Ile Leu Ser Ala Leu Asp Lys Gly Ser Thr His Thr  
 325 330 335  
 Ala Cys Ser Gly Pro Ile Asp Glu Leu Leu Asp Met Lys Ser Glu Glu  
 340 345 350  
 Gly Ala Cys Leu Gly Pro Val Ala Gly Thr Pro Glu Pro Glu Gly Ala  
 355 360 365  
 Asp Lys Asp Asp Leu Leu Leu Ser Glu Ile Phe Asn Ala Ser Ser  
 370 375 380  
 Leu Glu Glu Gly Glu Phe Ser Lys Glu Trp Ala Ala Val Phe Gly Asp  
 385 390 395 400  
 Gly Gln Val Lys Glu Pro Val Pro Thr Met Ala Leu Gly Glu Pro Asp  
 405 410 415  
 Pro Lys Ala Gln Thr Gly Ser Gly Phe Leu Pro Ser Gln Leu Leu Asp  
 420 425 430

A2

Gln Asn Met Lys Asp Leu Gln Ala Ser Leu Gln Glu Pro Ala Lys Ala  
 435 440 445  
 Ala Ser Asp Leu Thr Ala Trp Phe Ser Leu Phe Ala Asp Leu Asp Pro  
 450 455 460  
 Leu Ser Asn Pro Asp Ala Val Gly Lys Thr Asp Lys Glu His Glu Leu  
 465 470 475 480  
 Leu Asn Ala

<210> 6  
 <211> 471  
 <212> PRT  
 <213> Homo sapiens

<400> 6

Met Ser His His Pro Ser Gly Leu Arg Ala Gly Phe Ser Ser Thr Ser  
 1 5 10 15  
 Tyr Arg Arg Thr Phe Gly Pro Pro Pro Ser Leu Ser Pro Gly Ala Phe  
 20 25 30  
 Ser Tyr Ser Ser Ser Ser Arg Phe Ser Ser Ser Arg Leu Leu Gly Ser  
 35 40 45  
 Ala Ser Pro Ser Ser Ser Val Arg Leu Gly Ser Phe Arg Ser Pro Arg  
 50 55 60  
 Ala Gly Ala Gly Ala Leu Leu Arg Leu Pro Ser Glu Arg Leu Asp Phe  
 65 70 75 80  
 Ser Met Ala Glu Ala Leu Asn Gln Glu Phe Leu Ala Thr Arg Ser Asn  
 85 90 95  
 Glu Lys Gln Glu Leu Gln Glu Leu Asn Asp Arg Phe Ala Asn Phe Ile  
 100 105 110  
 Glu Lys Val Arg Phe Leu Glu Gln Gln Asn Ala Ala Leu Arg Gly Glu  
 115 120 125  
 Leu Ser Gln Ala Arg Gly Gln Glu Pro Ala Arg Ala Asp Gln Leu Cys  
 130 135 140  
 Gln Gln Glu Leu Arg Glu Leu Arg Arg Glu Leu Glu Leu Leu Gly Arg  
 145 150 155 160  
 Glu Arg Asp Arg Val Gln Val Glu Arg Asp Gly Leu Ala Glu Asp Leu  
 165 170 175  
 Ala Ala Leu Lys Gln Arg Leu Glu Glu Thr Arg Lys Arg Glu Asp  
 180 185 190  
 Ala Glu His Asn Leu Val Leu Phe Arg Lys Asp Val Asp Asp Ala Thr  
 195 200 205  
 Leu Ser Arg Leu Glu Leu Glu Arg Lys Ile Glu Ser Leu Met Asp Glu  
 210 215 220  
 Ile Glu Phe Leu Lys Lys Leu His Glu Glu Glu Leu Arg Asp Leu Gln  
 225 230 235 240  
 Val Ser Val Glu Ser Gln Gln Val Gln Gln Val Glu Val Glu Ala Thr  
 245 250 255  
 Val Lys Pro Glu Leu Thr Ala Ala Leu Arg Asp Ile Arg Ala Gln Tyr  
 260 265 270  
 Glu Ser Ile Ala Ala Lys Asn Leu Gln Glu Ala Glu Glu Trp Tyr Lys  
 275 280 285  
 Ser Lys Tyr Ala Asp Leu Ser Asp Ala Ala Asn Arg Asn His Glu Ala  
 290 295 300  
 Leu Arg Gln Ala Lys Gln Glu Met Asn Glu Ser Arg Arg Gln Ile Gln  
 305 310 315 320  
 Ser Leu Thr Cys Glu Val Asp Gly Leu Arg Gly Thr Asn Glu Ala Leu  
 325 330 335

A2



Leu Arg Gln Leu Arg Glu Leu Glu Glu Gln Phe Ala Leu Glu Ala Gly  
                   340                  345                  350  
 Gly Tyr Gln Ala Gly Ala Ala Arg Leu Glu Glu Glu Leu Arg Gln Leu  
                   355                  360                  365  
 Lys Glu Glu Met Ala Arg His Leu Arg Glu Tyr Gln Glu Leu Leu Asn  
                   370                  375                  380  
 Val Lys Met Ala Leu Asp Ile Glu Ile Ala Thr Tyr Arg Lys Leu Leu  
 385                  390                  395                  400  
 Glu Gly Glu Glu Ser Arg Ile Ser Val Pro Val His Ser Phe Ala Ser  
                   405                  410                  415  
 Leu Asn Ile Lys Thr Thr Val Pro Glu Val Glu Pro Pro Gln Asp Ser  
                   420                  425                  430  
 His Ser Arg Lys Thr Val Leu Ile Lys Thr Ile Glu Thr Arg Asn Gly  
                   435                  440                  445  
 Glu Gln Val Val Thr Glu Ser Gln Lys Glu Gln Arg Ser Glu Leu Asp  
                   450                  455                  460  
 Lys Ser Ser Ala His Ser Tyr  
 465                  470

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A2